Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supplementary Information:

A New Strontium Based Reactive Carbonate Composite for Thermochemical Energy Storage

Adriana P. Vieira,* Kyran Williamson, Terry D. Humphries, Mark Paskevicius, Craig E. Buckley*

Physics and Astronomy, Fuels and Energy Technology Institute, Curtin University, GPO Box U1987, Perth, WA 6845, Australia. E-mail: apiresvieira@gmail.com; c.buckley@curtin.edu.au

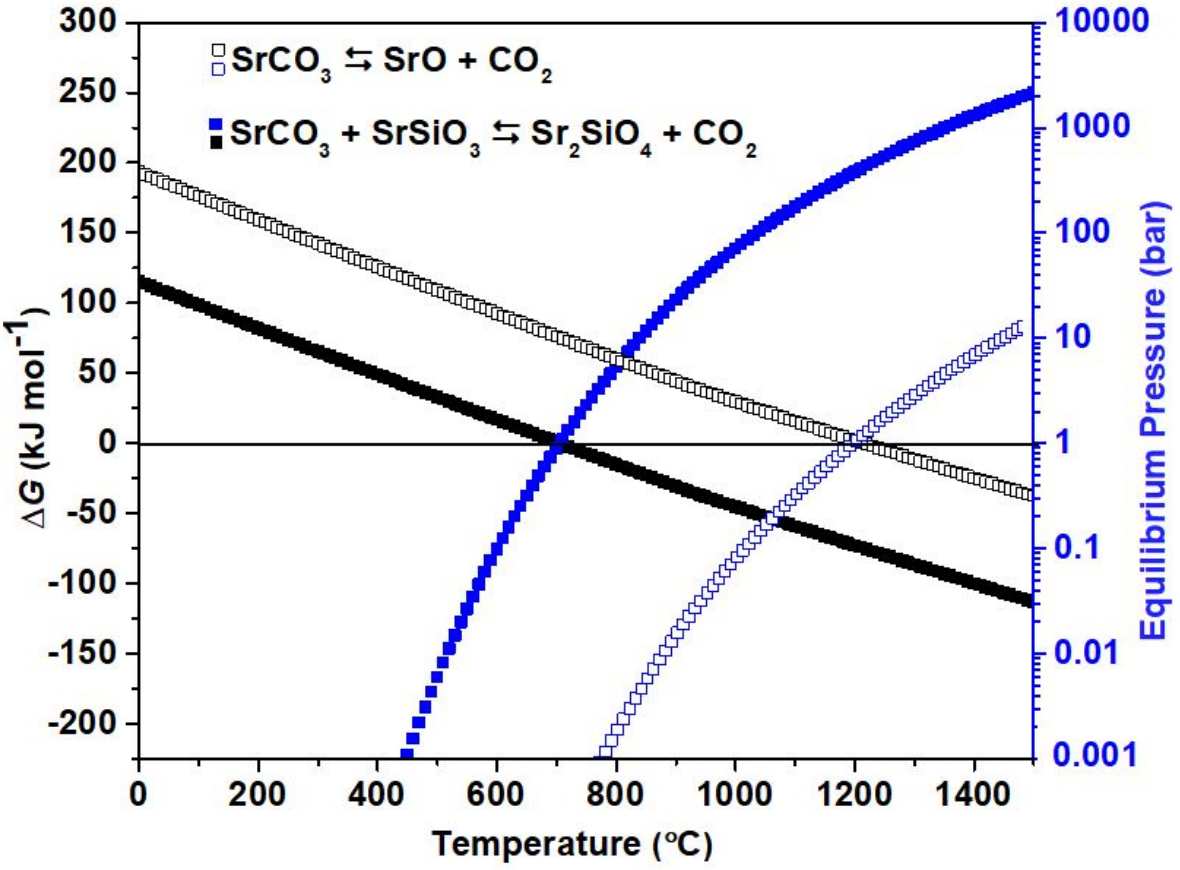

Figure **SI-1:** Gibbs free energy and equilibrium pressure dependence on temperature based on thermodynamics of the reactions.[24]

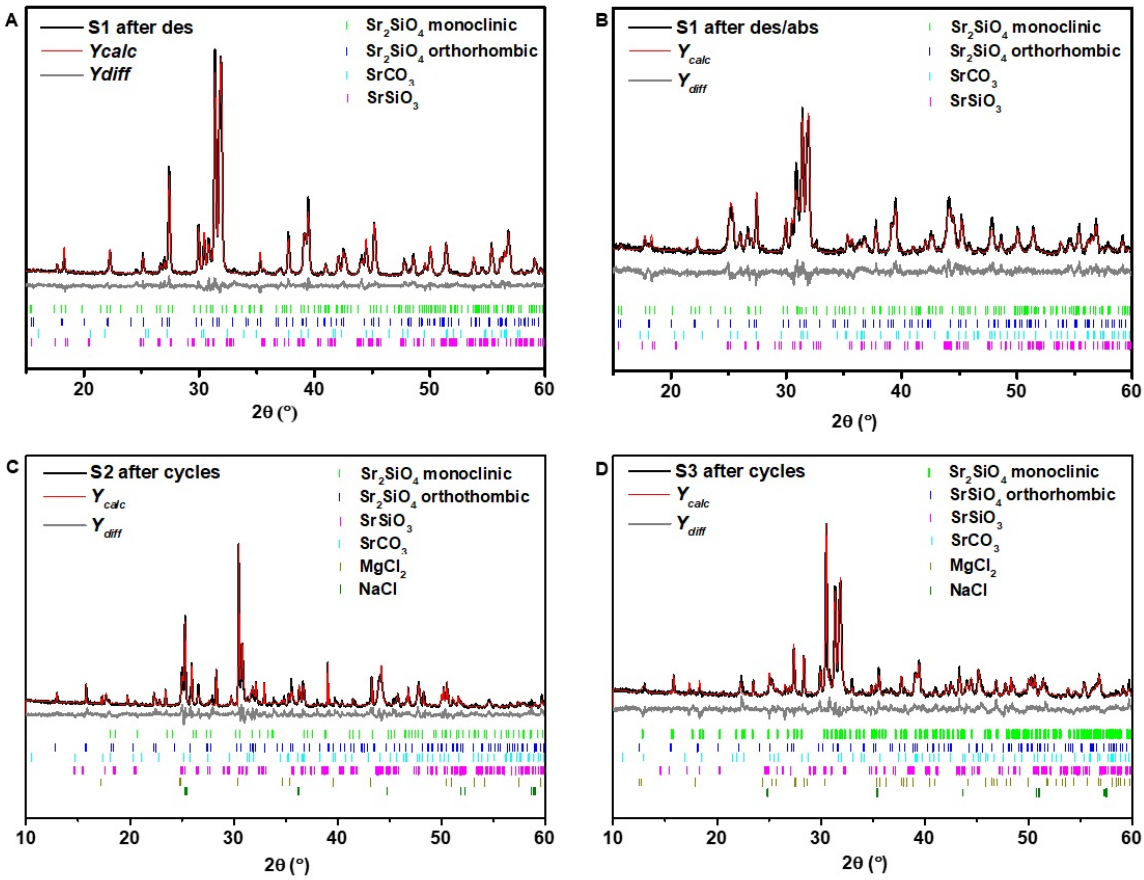

Figure **SI-2**: Rietveld refinement of (A) **S1** after desorption. R_{wp} = 7.89%; (B) **S1** after des/abs. R_{wp} = 8.34%; (C) **S2** after cycles. R_{wp} = 7.24% (C); (D) **S3** after cycles. R_{wp} = 7.61%.

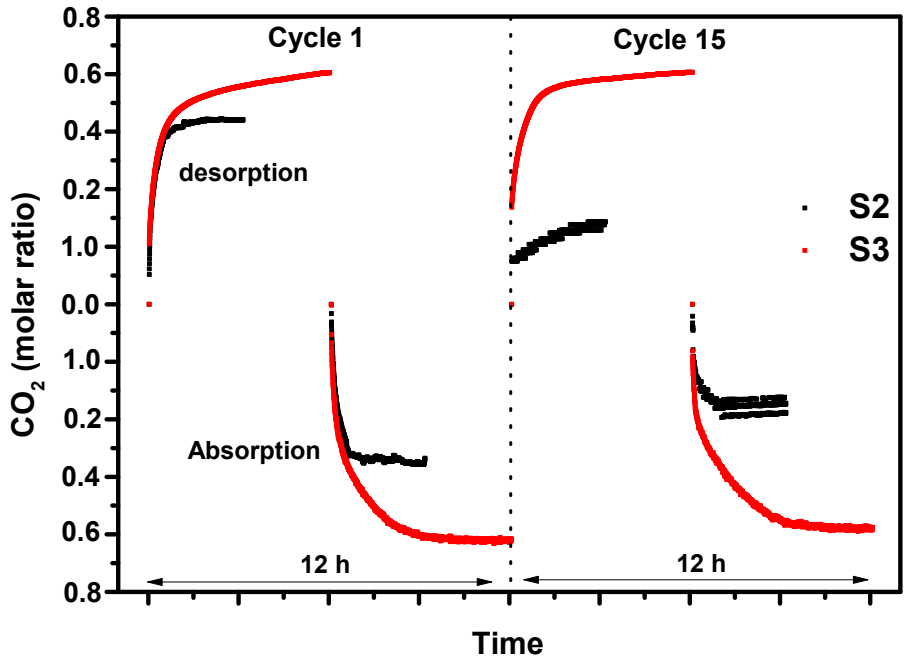

Figure SI-3. Comparison of the kinetics of CO_2 desorption/absorption between the 1st and 15th cycles for samples **S2** and **S3.**